

05/21/14 Agenda

- Any retake or make ups need to be completed by THIS FRIDAY (5/23)!!!!

- Review Homework
 - Worksheet - Day 2 - Simplifying Radicals
- Chapter 10 - Day 3 - Radicals with Coefficients
- Homework
 - Worksheet - Day 3 - Simplifying Radicals
- Tomorrow
 - Short Quiz (4-5) problems
 - Review Chapter 9 Test
 - Start Finals Review

REVIEW SIMPLIFYING RADICALS: "The Buddy System"

$$\sqrt{350}$$

$$\begin{array}{cc} 35 & 10 \\ \swarrow & \searrow \\ 7 & 5 & 5 & 2 \end{array}$$

$$5\sqrt{7 \cdot 2}$$

$$5\sqrt{14}$$

$$\sqrt{x^9 y^8 z}$$

$$\begin{array}{cc} x \cdot x^8 & z \\ \swarrow & \searrow \\ x^4 & x^4 & y^4 & y^4 \end{array}$$

$$x^4 y^4 \sqrt{xz}$$

$$\sqrt{45p^3}$$

$$\begin{array}{cc} 9 \cdot 5 & p^2 \\ \swarrow & \searrow \\ 3 & 3 & p & p \end{array}$$

$$3p\sqrt{5p}$$

$$\begin{array}{r} 3 \\ 2 \\ + 4 \\ \hline 9 \end{array}$$

$$\sqrt{324}$$

$$\begin{array}{cc} 2 & 162 \\ \swarrow & \searrow \\ 2 & 81 \end{array}$$

- 2 - ENDS IN EVEN#
- 5 - ENDS IN 5 OR 0
- 10 - ENDS IN 0

- 3 - ADD DIGITS
- IF THE SUM IS
DIVISIBLE BY
3, THE NUMBER
IS DIVISIBLE BY
3

- 9 - SAME AS FOR 3 BUT
THE SUM MUST BE
DIVISIBLE BY 9

Unit 10 - Day 3 - Radicals with Leading Coefficients

May 21, 2014

COEFFICIENT IN FRONT OF THE RADICALS:

There is already a number outside of the radical (house), so...
Multiply it with anything else that gets to leave!

$$\begin{array}{l} 3\sqrt{20} \\ \swarrow \\ \begin{array}{c} 4 \cdot 5 \\ \swarrow \searrow \\ (2) (2) \end{array} \\ \swarrow \\ 3 \cdot 2\sqrt{5} \\ 6\sqrt{5} \end{array}$$

$$\begin{array}{l} 2\sqrt{8x^{15}} \\ \swarrow \\ \begin{array}{c} 2 \cdot 4 \\ \swarrow \searrow \\ (2) (2) \end{array} \quad \begin{array}{c} x^4 \\ \swarrow \searrow \\ (x^2) (x^2) \end{array} \\ \swarrow \\ 2 \cdot 2 \cdot x^7 \sqrt{2x} \\ 4x^7 \sqrt{2x} \end{array}$$

Unit 10 - Day 3 - Radicals with Leading Coefficients

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PRACTICE: You Try!

1.) $5\sqrt{700} = 50\sqrt{7}$

2.) $3\sqrt{80} = 12\sqrt{5}$

3.) $2\sqrt{12a^5} = 4a^2\sqrt{3a}$

4.) $4x\sqrt{39x^3}$

$4x \cdot x \sqrt{39x}$
 $4x^2 \sqrt{39x}$

MIXED PRACTICE: You Try!

1.) $4\sqrt{24}$

2.) $4\sqrt{216}$

3.) $2\sqrt{252}$

4.) $4\sqrt{150n}$

5.) $3\sqrt{125r^4}$

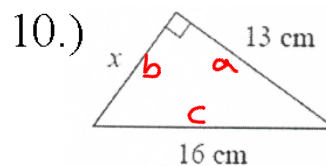
6.) $\sqrt{72x}$

7.) $7\sqrt{96m^2n^3}$

8.) $3\sqrt{48x^2y^2}$

9.) $7\sqrt{50x^2y^4}$

Handwritten work for problem 9 shows prime factorization: $50 = 2 \cdot 5^2$. The 5^2 is circled in blue, and the 2 is crossed out with a red X. The x^2 and y^4 are also circled in blue. The final simplified expression is written as $7 \cdot 5 \cdot x \cdot y^2 \sqrt{2}$, which is then simplified to $35xy^2\sqrt{2}$.



Handwritten work for problem 10 uses the Pythagorean theorem: $a^2 + b^2 = c^2$. Substituting the known values gives $13^2 + x^2 = 16^2$, which simplifies to $169 + x^2 = 256$. Subtracting 169 from both sides yields $x^2 = 87$.

Handwritten solution for problem 10: $x = \sqrt{87}$